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Income from Owner-occupied Housing, 1969 to 2011: New Evidence from the Survey of Household Spending and the Survey of Financial Security

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.. not available for a specific reference period
... not applicable
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0^s value rounded to 0 (zero) where there is a meaningful distinction between true zero and the value that was rounded
^{p} preliminary
^{r} revised
x suppressed to meet the confidentiality requirements of the *Statistics Act*
^{E} use with caution
F too unreliable to be published
* significantly different from reference category ($p < 0.05$)

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Income from Owner-occupied Housing, 1969 to 2011: New Evidence from the Survey of Household Spending and the Survey of Financial Security

by W. Mark Brown and Afshan Dar-Brodeur, Economic Analysis Division

This article[1] in the *Economic Insights* series uses data from the latest cycles of the Survey of Household Spending and the Survey of Financial Security to examine trends in the implicit income derived from owner-occupied housing. Covering the 1969-to-2011 period, the article updates previous estimates of the returns to housing in order to assess the implications of the shifting economic environment of the late 2000s.

Although trends and determinants of home ownership have frequently been analyzed, the focus has shifted recently to the implicit income generated by owner-occupied housing, because it provides a potentially important source of income in retirement. In an analysis of the implicit income generated by owner-occupied housing during the 1969-to-2006 period, Brown and Lafrance (2010) demonstrated an overall rise in the percentage of household income derived from home ownership. However, more recent changes in the economic environment could have affected the returns to housing.

The continued increase in Canadian home prices after the 2008-2009 global financial crisis may have increased the returns to owner-occupied housing, but the size of these gains also depends on the net equity in the home. New homeowners who found it difficult to assemble a down payment may have contributed to lower home equity levels in the younger age groups in which they tend to appear. In contrast, older homeowners, who entered the housing market before the recent boom, may have seen greater equity gains. The net gain in the returns to housing, therefore, depends on a number of factors that influence home equity as well as on the implicit return on the housing asset.[2] In this context, the current article uses data from the most recent Survey of Household Spending (SHS), its predecessor the Survey of Family Expenditures (FAMEX), and the Survey of Financial Security (SFS) to estimate the income generated by investment in owner-occupied housing over the 1969-to-2011 period.[3]

Overall, the article finds that between 2006 and 2011 the contribution of income from housing by and large at least kept pace with other sources of income for both younger and retirement-age homeowners. Owner-occupied housing continues to be an important source of income for retirement-age households that help to close the income gap between these households and their working-age counterparts.

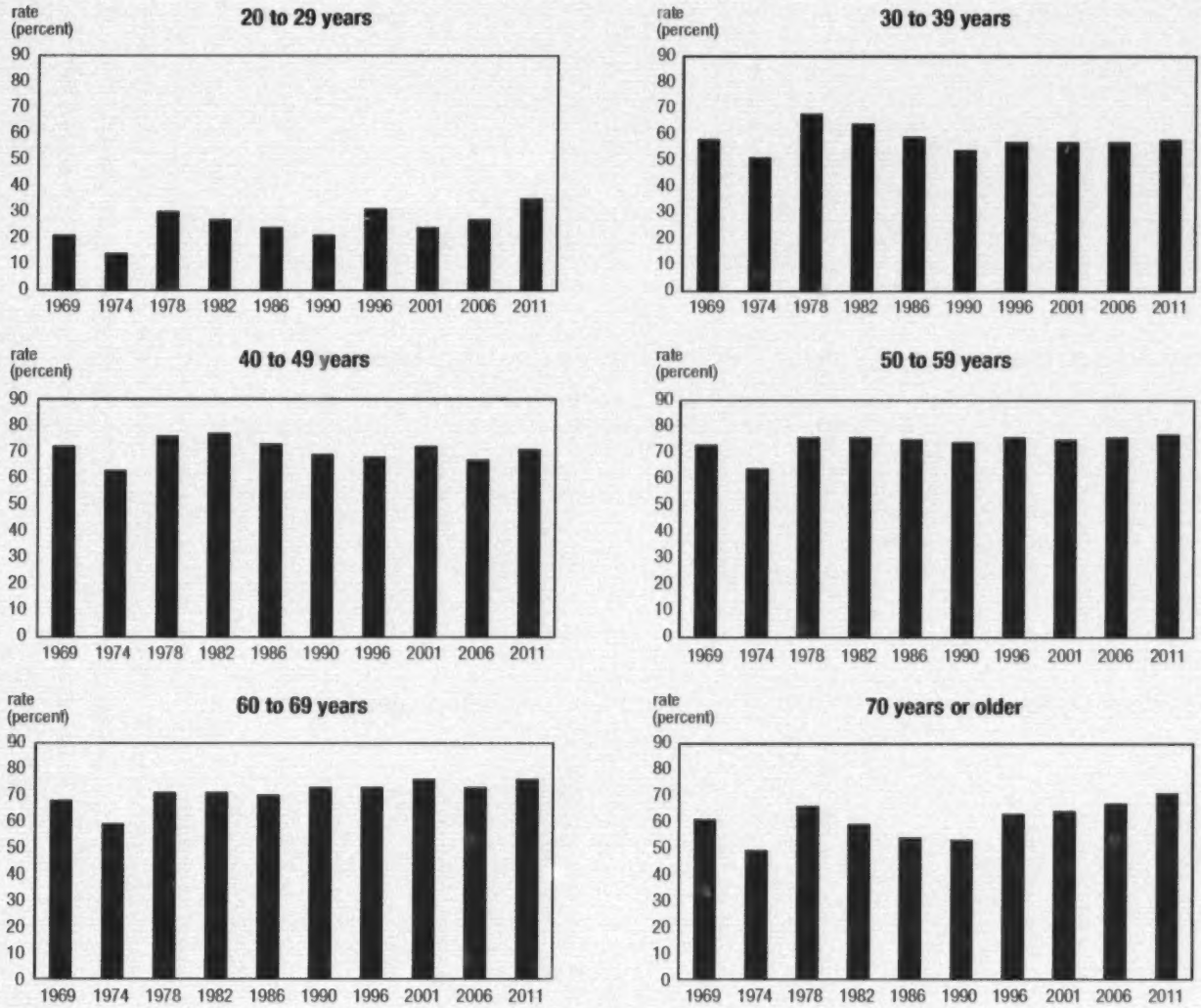
Home ownership and home equity

For the population as a whole, trends in the returns from housing will partially be determined by trends in home ownership. Evidence from FAMEX and the SHS suggests that home ownership rates continued to rise in the 2000s across all age groups (Chart 1). This was most apparent for people just entering the workforce and those of retirement age. From 2006 to 2011, home ownership rates increased from 27% to 35% among 20- to 29-year-old households and from 67% to 71% among households aged 70 or older.[4] Increases were more modest for other age groups, with no change in home ownership rates among 50- to 59-year-olds (77%). Overall, home ownership rates in 2011 were among the highest they have been over the 42-year study period, particularly for people at the start and end of their working lives.

Canadians continue to purchase homes, with greater numbers potentially benefitting from the additional income generated by housing. At issue is whether the implicit income attributable to owner-occupied housing has changed in the wake of the 2008-2009 recession.

1. The authors are indebted to Amélie Lafrance for computational help during the course of preparing this paper.
2. The return on the housing asset is the price at which the household would be willing to rent out the asset.
3. On their own, or in combination, these household-based surveys collect sufficient information to estimate the returns to owner-occupied housing over this period.
4. The SFS produces qualitatively similar results.

Chart 1
Home ownership rate, by age group, 1969 to 2011



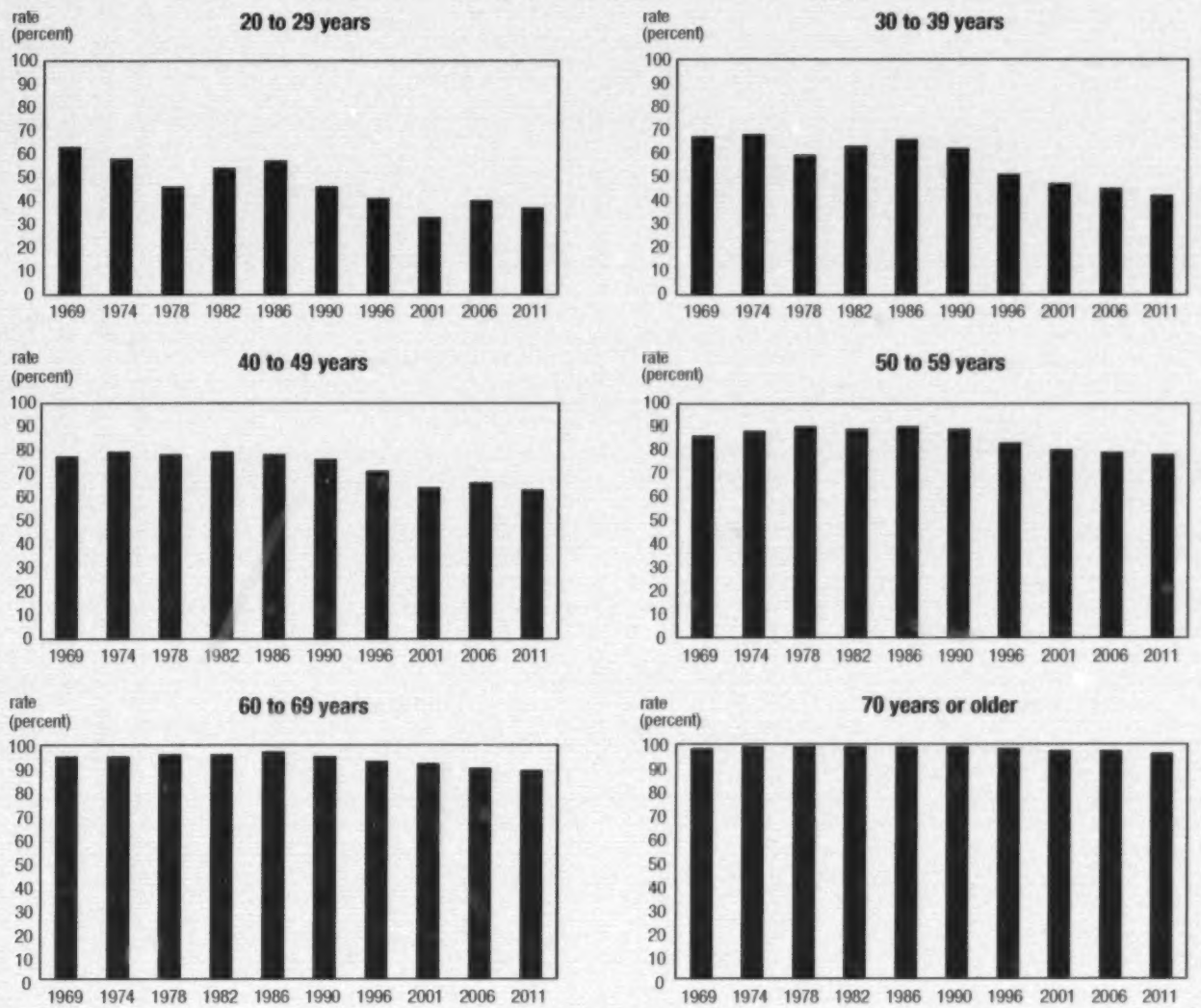
Sources: Statistics Canada, Survey of Family Expenditures, 1969 to 1996, and Survey of Household Spending, 2001 to 2011.

Determining the implicit income from owner-occupied housing requires estimating the value of housing services. Housing is an asset (capital) that provides a flow of housing services, with the accumulation of equity paying for these services. Thus, purchasing a home is an investment that should pay a return. The value of housing services paid for by equity in the home represents this return and the implicit income generated by the home. Trends in the estimated return to equity, therefore, will be partially determined by the accumulated equity in the home.

For the purpose of this study, home equity is the value of the home, net of the remaining balance on the mortgage.[5] It is derived from information available from FAMEX from 1969 through 1996. Because this information is not available from the 2001-to-2011 SHS, the SHS is supplemented by home equity values from the 1999, 2005 and 2012 SFS. As well, the 2001 SHS did not report the value of the home—this information is derived from the 2001 Census.[6]

5. Note that while this balance does not include home equity lines of credit, as shown below, the overall findings are insensitive to their inclusion.
6. The average house value is by census subdivision and age group of the reference person, and is an approximation.

Chart 2
Home equity shares, by age group of homeowner, 1969 to 2011



Sources: Statistics Canada, Survey of Family Expenditures, 1969 to 1996, Survey of Household Spending, 2001 to 2011, Survey of Financial Security, 1999, 2005, and 2012, and the 2001 Census of Population.

As expected, home equity shares—that is, home equity as a percentage of the total value of the home—rose with the age of the homeowner, regardless of the year in question (Chart 2). But unlike trends in home ownership, home equity shares declined among all age groups in recent years, particularly younger Canadians. Thus, while both home ownership rates and home prices have risen, Canadians have contributed relatively less money toward home equity, a trend that has persisted since the mid-1980s. For homeowners aged 20 to 29, home equity was lowest in 2001 (33%); this percentage rose to 40% in 2006, but declined to 37% in 2011, perhaps reflecting the drop in interest rates and accompanying rise in home prices in that period. For homeowners aged 30 to 39, home equity shares declined from 66% in 1986 to 51% in 1996, and to 43% in 2011. These trends held for older age groups, but were less pronounced for homeowners older than age 50.

These findings point to higher home ownership, but lower home equity shares. Low interest rates in recent years may have induced Canadians to purchase homes, thereby increasing the home ownership rate. However, with the continued increase in home prices, it is possible that they have been making relatively smaller down payments than in earlier periods, which resulted in lower equity shares. Returns to housing depend on the twin effects of lower home equity shares and higher house prices. This impact is assessed in the next section.

Value of housing services and implicit income

If housing is treated as an asset, the value of housing services can be estimated either by measuring the capital services provided by the investment in the home or by the rent that could be obtained for the home if it was on the rental market, often referred to as imputed rent. Capital services can be estimated via user cost, which is the price that an owner of an asset would demand when renting out the asset. Because the user cost of a dwelling and its imputed rent tend to equate, the value of housing services can be derived by incorporating elements of these two measures.[7] The resulting nominal dollar estimates of the value of housing services tended to increase over the period, which is expected to occur with generalized inflation, with a slight decline in the average between 1990 and 1996, and a rise from 2001 (Table 1).[8] These trends coincided with the upturn in housing prices after 2000, particularly since 2006, with the average value of housing services increasing by 31% between 2006 and 2011 (from $10,693 to $14,008), outpacing the generalized rate of inflation of 10%.[9]

The value of housing services is multiplied by the derived equity shares (in the previous section) to capture the implicit income generated by home ownership—in other words, the total return to equity invested in the house. The income that housing provides as a percentage of total personal income inclusive of these returns (but net of taxes and deductions) indicates its relative importance over time and across age groups (Table 2, Panel A) (net personal income and the return to equity are adjusted for household size across age groups, and percentages are reported for homeowners only).[10] Regardless of the year, returns to housing equity increased in relative importance with the age of the homeowner, as reflected by their rising share of total income. For homeowners of all ages, the share of income derived from home equity increased between 1969 and 2011. For those aged 70 or older, the contribution of implicit income from equity invested in housing fluctuated between 1969 and 1986, from a low of 10.6% in 1969 to a high of 18.3% in 1974; the average for this sub-period was around 13%. The percentages were consistently higher in the 1990-to-2011 period, averaging about 16%. Moreover, despite declining home equity shares between 2006 and 2011, the share of implicit income derived from equity invested in housing rose for this age group from 15% to almost 17%.

Table 1
Average annual value of housing services by house value quintiles (estimates based on user cost and imputed rents), 1969 to 2011

	1969	1974	1978	1982	1986	1990	1996	2001	2006	2011
	dollars									
Quintile 1	307	1,197	936	1,397	1,712	3,855	3,056	4,643	3,897	5,800
Quintile 2	599	1,727	1,673	2,111	2,836	5,462	5,009	6,809	6,492	9,150
Quintile 3	873	2,011	2,115	2,713	3,668	6,919	6,391	8,264	8,703	11,676
Quintile 4	1,074	2,537	2,732	3,461	4,690	8,954	8,318	10,299	11,642	15,128
Quintile 5	1,539	3,783	4,171	5,337	8,200	15,331	14,305	15,839	22,163	26,317
Mean	896	2,327	2,421	3,082	4,296	8,319	7,514	9,183	10,693	14,008

Sources: Statistics Canada, Survey of Family Expenditures, 1969 to 1996, Survey of Household Spending, 2001 to 2011, Survey of Financial Security, 1999, 2005, and 2012, and the 2001 Census of Population.

7. The user cost of capital depends on the opportunity cost of capital, out-of-pocket costs (insurance, property taxes, repairs and maintenance, and depreciation), and the expected appreciation of the home. Using estimated imputed rents at the middle house-value quintile, it is possible to derive the opportunity cost of capital net of the expected house price appreciation needed to estimate user costs. A full description of the methodology is provided in Brown and Lafrance (2010).
8. While these estimates do not account for inflation, they give a sense of the key changes over time. In the final analysis, these estimates are used in ratio form and are therefore unit-free.
9. CANSIM Table 326-0021.
10. Net income and the return to equity are divided by the square root of the household size. This is a standard method of accounting for possible economies of scale in a household, and also accounts for changing family sizes over the period of analysis as well as over age groups.

Homeowners aged 20 to 29 also derived a higher share of income from housing, particularly in recent years. Again, while home equity shares for this age group declined between 2006 and 2011, the share of implicit income from equity in home ownership increased from 5% to 6%. Increases in the income share of returns to equity for homeowners in other age groups were similar, although gains were more moderate for 30- to 39-year-olds.

In recent years, concerns have been expressed about Canadians' preparation for retirement. One way to assess the financial position of retired Canadians is to measure the income gap between those of retirement age and those of working age (Table 2, Panel B). Accounting for the implicit income from owner-occupied housing in these comparisons demonstrates the importance of housing as a potential source of retirement income (Table 2, Panel C). Based on the income of retirement-age (70 or older) homeowners relative to that of mid-career (40 to 49) and late-career (50 to 59) homeowners, the average income gap has narrowed in recent years, particularly when the implicit income generated by housing is taken into account. In 2011, the average net income of homeowners aged 70 or older was 78% of those aged 40 to 49, a 22-percentage-point income gap. However, when the returns to home equity are taken into account, the income of homeowners aged 70 or older amounts to 84% of that of homeowners aged 40 to 49, a 16-percentage-point income gap. The pattern relative to homeowners aged 50 to 59 is similar.

Table 2
Average net annual household income and returns to housing equity, adjusted for household size, by age group of homeowner, 1969 to 2011

	1969	1974	1978	1982	1986	1990	1998	2001	2006	2011
						percent				
Panel A – Share of income from housing equity										
Age group of homeowner										
20 to 29	4.2	6.1	3.9	3.4	4.3	4.8	4.7	5.4	4.9	6.0
30 to 39	4.5	7.5	5.5	4.4	5.4	7.7	5.7	6.3	5.8	6.0
40 to 49	5.2	8.6	7.0	5.3	6.3	9.5	7.6	8.5	8.1	9.4
50 to 59	5.9	9.6	8.4	6.3	7.4	11.0	8.8	11.0	10.0	11.2
60 to 69	8.2	12.5	11.3	8.4	9.7	15.3	12.3	15.2	13.7	14.1
70 or older	10.6	18.3	15.0	10.9	12.3	18.3	14.9	17.3	15.1	16.6
						ratio				
Panel B – Relative net income										
Age groups of homeowners										
70 or older relative to 40 to 49	0.64	0.68	0.60	0.65	0.64	0.73	0.69	0.68	0.71	0.78
70 or older relative to 50 to 59	0.62	0.60	0.57	0.61	0.62	0.70	0.66	0.65	0.66	0.74
Panel C – Relative net income plus returns to home equity										
Age groups of homeowners										
70 or older relative to 40 to 49	0.68	0.76	0.66	0.69	0.69	0.81	0.75	0.75	0.77	0.84
70 or older relative to 50 to 59	0.65	0.67	0.62	0.65	0.65	0.76	0.71	0.70	0.70	0.78

Note: Net income is personal income less income taxes, payments for life insurance, annuities, employment insurance, and public and private pension plans.
Source: Statistics Canada, authors' calculations based on data from the Survey of Family Expenditures, 1969 to 1996, the Survey of Household Spending, 2001 to 2011, Survey of Financial Security, 1995, 2005 and 2012, and the 2001 Census of Population.

Accounting for home equity lines of credit

Over the past decade, home equity lines of credit (HELOCs) became an increasingly popular means to buy homes or to unlock the equity in homes to make other purchases. Their increased use, however, may result in the overestimation of home equity and, in turn, the returns to owner occupied housing. To account for this, returns to owner occupied housing were re-estimated while taking into account the effect of HELOCs[11] on home equity.

In 2001, the effect of HELOCs was quite small, reducing home equity by about 1 percentage point or less (see Table 3). Over the ensuing decade, the increasing popularity of HELOCs reduced equity by more, particularly for those households aged 40 to 49 and 50 to 59 whose equity shares fell by about 4 percentage points. Nevertheless, their effect on equity levels was modest.

As a result, the share of income derived from home equity falls, but not to such an extent the main findings are changed qualitatively as the basic levels and trends in the data are maintained. Furthermore, the ratio of income of older retirement aged households to that of working age households aged 40 to 49 and 50 to 59 is left essentially unchanged.

Table 3
Home equity shares and share of income from home equity with and without HELOCs taken into account

	Without HELOCs			With HELOCs		
	2001	2006	2011	2001	2006	2011
	percent					
Panel A - Home equity shares						
Age group of homeowner						
20 to 29	33	40	37	33	39	36
30 to 39	47	45	42	46	43	40
40 to 49	64	66	63	63	62	59
50 to 59	80	79	78	78	77	74
60 to 69	92	90	89	91	88	86
70 or older	97	97	96	97	96	94
Panel B - Share of income from home equity						
Age group of homeowner						
20 to 29	5.4	4.9	6.0	5.4	4.7	5.9
30 to 39	6.3	5.8	6.0	6.2	5.6	5.7
40 to 49	8.5	8.1	9.4	8.3	7.7	8.8
50 to 59	11.0	10.0	11.2	10.9	9.7	10.6
60 to 69	15.2	13.7	14.1	15.1	13.3	13.7
70 plus	17.3	15.1	16.6	17.2	15.0	16.4
Panel C - Relative net income plus returns to home equity						
Age group of homeowner						
70 or older ratio to 40 to 49	0.75	0.77	0.84	0.75	0.78	0.85
70 or older ratio to 50 to 59	0.70	0.70	0.78	0.70	0.70	0.79

Note: HELOCs stands for Home Equity Lines of Credit.
Source: Statistics Canada, authors' calculations based on data from the Survey of Family Expenditures, 1969 to 1996, the Survey of Household Spending, 2001 to 2011, Survey of Financial Security, 1999, 2005 and 2012, and the 2001 Census of Population.

Reference

Brown, W.H., and A. Lafrance. 2010. *Incomes from Owner-occupied Housing for Working-age and Retirement-age Canadians, 1969 to 2006.* Economic Analysis Research Paper series, no. 66. Statistics Canada catalogue no. 11F0027M. Ottawa: Statistics Canada.

11. Information on HELOCs are derived from the Survey of Financial Security (1999, 2005 and 2012).